

EDINBURGH: A WORLD LEADING SUSTAINABLE FESTIVAL CITY



A series of case studies illustrating how the Edinburgh Festivals are responding to the climate emergency.

Too Close to the Sun by Barrowland Ballet, photo Brian Hartley,
courtesy Edinburgh International Children's Festival



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An aerial photograph of Edinburgh, Scotland, featuring the historic Edinburgh Castle on a rocky outcrop in the background. In the foreground, the grassy slopes of Arthur's Seat are visible, with several winding paths and small groups of people walking. The city of Edinburgh is spread out below the hills, with its characteristic red-roofed buildings and a prominent church spire. The sky is a clear, pale blue. Overlaid on the right side of the image is a large, bold, white text block.

**THE GLOBAL
RESPONSE TO
CLIMATE CHANGE
MEANS IT IS
ESSENTIAL FOR
FESTIVALS TO EVOLVE
THEIR CURRENT
FORM OF OPERATING**

Introduction

The climate emergency is one of the greatest challenges facing society. Our global climate is changing, causing devastating impacts around the world, particularly on those who have the fewest resources and are the most vulnerable. Without decisive changes and moves towards a net zero future, the situation will become far worse over coming decades.

If the Edinburgh Festivals are to flourish in such a net zero carbon future, we will need to find innovative, sustainable ways of operating and fulfilling the essential function of festivals: to bring people together in concentrated moments of communal celebration.

Each of the Edinburgh Festivals has developed its own action plan for reducing its carbon footprint over the next five to ten years, while also identifying how it will meet the ambitious climate targets set by the Scottish Government and the City of Edinburgh Council.

This publication seeks to provide some examples of the many ways the Edinburgh Festivals are taking action to not only reduce those carbon impacts in their control but also influence others – audiences, participants, and suppliers – to do the same. These examples or case studies are presented across a number of key organisational areas, such as operations and communications, and illustrate the festivals' journey towards achieving their climate goals.

In doing so, the Edinburgh Festivals wish to identify their role as responsible citizens while providing support and inspiration to others who may be undertaking their own climate change journey.

It is our ambition to positively respond to the climate emergency, thus ensuring a world in which people, nature and culture can flourish sustainably for the benefit of future generations.

> This publication has been developed by the festivals' Environment & Sustainability Working Group, being dedicated staff members from each festival who meet regularly to develop collective strategy, share insights, and drive change.

Cultural audiences are among some of the most concerned about the climate crisis



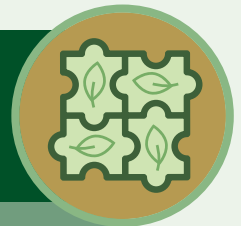
86%

of cultural audiences
are worried about the
climate crisis

93%

have made changes
to their lifestyle

Audiences expect awareness and responsibility from cultural organisations



72%

think cultural
organisations have
a responsibility to
influence society
about the climate
emergency

**only
16%**

think cultural
organisations place great
importance on the role
they play in the climate
emergency



>>>>> COLLABORATIVE WORKING

Field by Curious Seed, part of Edinburgh International Festival,
photo courtesy of Festivals Edinburgh



Collective Strategy

Challenge/Opportunity

How can you create a policy framework for a collective of festivals with very different operations?

Action Taken

Although the Edinburgh Festivals had been working individually on environment issues for a number of years, it was clear that such work was piecemeal and needed to have a more strategic foundation, especially in the context of our post-pandemic recovery. As such it was agreed to establish a joint festivals Environment and Sustainability Working Group and create a policy document which would outline how the festivals were going to accelerate their own response to climate change.

The structure of the resulting document – ***Taking Action on Climate Change*** – took the form of a top-level Q&A, based around the questions most commonly asked about the festivals approach to the climate emergency – why are you taking action; where can you make change; what are you going to do; and how will you measure/report progress? In answering the first of these it was stated that if the Festivals are to flourish in a net zero carbon future, they need to find innovative, sustainable ways of operating and aligning such an approach with one of the unique features of festivals, namely that of communal gathering.

The areas where we could make changes were defined by what was both in and out of a festival's

direct control, plus those that were in its sphere of influence. Planned changes were intended to reduce not only the emissions within direct control, but also emissions that could only be addressed through partnership working and influencing those who hold the levers of power in each area. The document did not detail what we were going to do, but rather identified the degree of commonality across certain action areas and provided a two phased approach to measuring – the verification of emissions, and the verification of reduction targets.

Learnings

Although the policy statement was useful in creating a shared ambition, it was quickly clear that more specific actions were needed that could respond to the different operations of each of our 11 festivals. Consequently, a shared **Carbon Reduction Route Map**, was published as a framework for individual festival carbon reduction planning, that would help contribute to the city of Edinburgh's goal of reducing carbon emissions to net zero by 2030.

It was realised early on that any specific carbon reduction plans had to be unique to each Festival – given the difference of each festival – and so there was no point in wasting time in trying to corral the festivals in a 'one size fits all' plan of action. **Collective work does not mean you have to do all the same things together; instead, it was decided that the best option would be to create a shared framework within which each festival could then do its own thing.**



Collective Route Map

Challenge/Opportunity

How can you develop an environmental policy framework into a more meaningful set of operational actions that works for all Festivals?

Action Taken

The Edinburgh Festivals have been working together to share knowledge on reducing environmental impacts since 2011, when they co-founded Creative Carbon Scotland and then the Green Arts Initiative which now has over 450 members nationwide. This work accelerated as the festivals emerged from the Covid-19 pandemic and in 2021 'Taking Action on Climate Change' was published which was a broad policy framework aimed at identifying how the festivals would respond to the climate emergency and help Edinburgh achieve its goal of reducing carbon emissions to net zero.

However, it was clear early on that such a policy framework needed to be turned into a structured operational plan through which festivals could implement more meaningful specific actions. Consequently, the festivals agreed a shared Carbon Reduction Route Map as the basis for their individual carbon reduction planning, identifying key areas of responsible and leading practice.

Within the Route Map, the Festivals' areas of operations which generate emissions are categorised into bronze, silver and gold routes, based on the scope of emissions that were expected to be included in the City of Edinburgh Council's City Sustainability Strategy 2030:

Bronze: emissions that the Festivals have control over AND which are very likely to form part of the Council's Sustainability Strategy

Silver: emissions that are likely to be included in the Council's net zero programme, but are from activities over which the Festivals do not have direct control. However, the festivals recognise that they have a responsibility to play an influencing role to encourage and support venues, performers and audiences, the Council and Edinburgh-based businesses to reduce the carbon they generate through activities which support Festivals

Gold: unlikely to be included in the Council's carbon reduction programme, as they are 'Scope-3', extra territorial emissions (under the internationally-recognised GHG Protocol for Cities), which are often not built into emissions analyses due to the complexity of modelling. However, the Festivals recognise that the activities in the gold column generate the largest proportion of emissions, and therefore several of the Festivals are already developing plans to help reduce these, through both changing their own working practices and influencing those with whom they work



POLICY THINKING

London Symphony Orchestra residency at Edinburgh
International Festival, photo by Mihaela Bodlovic



Policy Statement

Challenge/Opportunity

How can you create a policy statement which recognises that international work has an environmental impact but that global artists need to share their lived experiences?

Action Taken

The stark reality of the Scottish Government's declaration of a global climate emergency made Edinburgh International Festival evaluate the role it had to play in reducing its impact on the environment. Creating their environmental policy required a thorough analysis of the festival organisation. The process identified the value that the festival brought to both Edinburgh and Scotland, as well as highlighting the areas that had environmental impacts. SMART objectives were then created for travel, estates, behaviour change and leadership through the lens of two major strands: operations and artistic offering.

The Festival embedded the core principles of the UN Sustainable Development Goals (SDGs) in their approach to carbon reduction, while ensuring that objectives met the ambitions of the City of Edinburgh Council and Scottish Government Net Zero policies. In 2021, they published the Sustainability Action Plan, Sustainability Policy and a Carbon Reduction Policy, and then started to make the policies achievable by first appointing a permanent Environmental Sustainability Manager.

Following this, the festival needed to set up a rigorous reporting framework and decided to implement the ISO 14064 (Reporting and Quantifying Greenhouse Gas Emissions) reporting method. Commissioning BSI (British Standards Institute), the UK's National Standards Body, to verify their work and have confidence in the information it was gathering – and they are now in a position to repeat the process year on year and make measurable progress towards their ambitions of achieving Net Zero.

Learnings

Publishing policies provided a focus to work on sustainability. It ignited the sustainability journey and provided the framework for action. They have focused upon the areas where they think they can have the greatest impact. Targets that have the deadline of 2045 will not be achieved without meaningful short-term objectives.

They have collaborated with many organisations throughout the development process – including with academia on student projects – sharing experiences and learning from others where possible. The guiding principle being – you can't do it on your own.

Creating policies is the start of the journey. Organisational buy in is essential towards achieving policy objectives and sustainable practices can't stand alone but need to be interwoven into every policy area of the organisation.



Climate Justice

Challenge/Opportunity

How can an organisation embed climate justice principles?

Action Taken

Climate Justice is a concept often heard in the media but very little in the part of the cultural sector which the Edinburgh International Children's Festival operates in. It simply means that the countries who contributed the least to climate change are the one most affected by it, and thus that the responsibility for dealing with climate change should lie with those that caused it.

However, the festival really struggled to embed that very big issue within their overall organisation. With the support of the management team, one member of staff undertook free training delivered by StayGrounded – a national network committed to degrow aviation.

Each week, the staff member would share key learning with the rest of the festival team and trigger conversations. Mulling over this information and reflections, the festival concluded that the climate crisis was a Child's Rights issue: children are the ones who contributed the least to climate change and will be the ones facing the consequences.

The most striking session of the overall training was seen to centre around the concept of Just Transition:

- We all want to tackle climate change but how do we get there?
- What kind of society do we want to be?
- How do we make sure we don't exacerbate inequalities along the way?

Thinking about climate justice led the festival to question how they can ever transform their current purpose without access to culture. If the end goal is to allow ourselves to be humans – dream, think outside the box, connect with others – then culture should be protected. Contributing to climate justice goes far beyond reducing carbon emissions. It is an essential component that is taking us where we want to be.

Learnings

This training programme now informs how the festival is making decisions around carbon emissions expenditure and climate justice. For every decision made around carbon reduction, consideration is given as to whether this will negatively impact on vulnerable groups.

For example, decisions to stop offering bus subsidies to schools to attend the festival, or stop touring shows in schools in rural places, need to be balanced against the probable exclusion of children living in remote areas who are already culturally underserved.

On the other hand, they have stopped paying for selected international delegates' travel to the festival in order to reduce flight emissions. And when they support Scottish artists to visit an international festival, they only travel by train, unless there are specific access issues.

It is through such thinking about Climate Justice principles that a more robust and well-balanced environmental policy should be updated.



Adaptation and Resilience

Challenge/Opportunity

How can you ensure that indigenous voices can be heard amidst the mix of perspectives on environmental rights?

Action Taken

As part of the Scottish International Storytelling Festival's Right To Be Human theme, marking the 75th Anniversary of the Universal Declaration of Human Rights, they decided to give priority amongst their limited number of international guests to a storyteller and musician from the Sami culture of northern Scandinavia. This was to ensure that indigenous voices would be heard amidst the mix of perspectives on human and environmental rights.

To maximise the carbon investment they invited the guests for a week and arranged for them to travel to three areas of Scotland in addition to Edinburgh where the festival has its main base at the Scottish Storytelling Centre. These areas were Dumfries in the southwest of Scotland, Dundee city in the Lowlands, and the southern Highlands in rural Perthshire. This was to ensure that a vital part of the programme would be available in a spread of geographical areas, so minimising travel distance for audiences.

The two artists, Stina Fagertun and Øystein Hanssen, travelled from northern Norway to Scotland by plane, but then used public transport, trains and buses, to travel within Scotland, giving a significant commitment of time and values to the festival. They appreciated being able to engage with local as well as international audiences.

This proved to be a critical factor in the Festival's climate resilience, since as the Sami guests arrived, Scotland was hit by an extended gale force storm accompanied by torrential rain and life-threatening floods. For two and a half days all travel, except in emergencies, was restricted by the Scottish Government.

Because the Festival was working with local community organisations and venues, they were quickly able to adapt their arrangements. Consequently, though some events were postponed none were cancelled. In these circumstances the hospitality of organisers and audiences was doubly warm, recognising the commitment of the tradition bearers to getting there, come what may!

The Festival's themes and the reality on the ground of climate change matched each other, giving a meaningful and highly valued context to the creative programme.

Learnings

Good sustainable relationships with artists and audiences can enable adaptability and resilience, even in the face of direct and very challenging climate change impacts.

Being prepared to adjust times and venues, while keeping all parties on the same wavelength and shared purpose, strengthens engagement. And this in turn builds relationships of trust which provide a fruitful basis for further collaboration.



OPERATIONS



E-ticketing

Challenge/Opportunity

How can you drastically reduce the waste associated with print ticketing?

Action Taken

Each year at the Edinburgh Festival Fringe, millions of tickets are sold across a wide spectrum of independently managed and operated venues. In the context of this scale, and the festival's decentralised structure, the development of a fully integrated and accessible digital ticket solution – one that worked for most, if not all, Fringe venues – was a challenge with many complexities. After several years' discussion, the Covid-19 pandemic expedited e-ticketing plans: the Fringe switched to e-ticketing as part of the festival's smaller return in 2021, with the service then further developed for the full-scale 2022 festival and beyond.

Initial reservations that the switch may prove too onerous for venues were happily unfounded. Where tickets were sold via the Fringe box office, venues were provided with a range of options to access attendees' details on the door. As venues were given the option to choose the method of access control that best suited their needs, there was minimal criticism.

Customer uptake and attitude was also a concern, but the pandemic had its impact there too: customer attitudes towards accessing digital content had softened, and e-ticketing was becoming far more common at events and festivals. Overall, customers were receptive and understanding of the changes made and adapted easily.

As part of advance preparations, the festival considered accessibility requirements around e-ticketing and built in solutions to ensure customers could still attend the events if smart phones/devices were not suitable for them. These options included posting out a hard copy of

the e-ticket or allowing customers to collect their physical ticket from the Fringe Shop at an arranged time; they could also confirm their information to venue staff verbally when attending their show.

Following its introductory year the festival responded to customer and venue feedback on e-ticketing, incorporating app developments to enhance the overall process. This work had been highlighted as of particular importance by Fringe participants and was well received upon delivery.

In a relatively short period, e-ticketing has become the default ticketing approach at the Fringe. Venues have a varying level of customer support infrastructure and the open access nature of the festival means a wide variety of events with different ticketing models take place. The successful rollout of e-ticketing in this context demonstrates the willingness of audiences and arts practitioners to embrace new approaches, and the logistical feasibility of digitising a traditional box office system despite the potential challenges of such a significant change in approach.

Learnings

The switch to e-ticketing was well received by festival audiences and stakeholders, with fewer issues encountered than had been anticipated. The complexity of measuring an e-ticket's digital carbon footprint versus that of a physical ticket remains challenging to quantify. However, alongside the obvious reduction of paper usage via the digital ticketing approach, other areas (such as a reduction in other materials required to support ticket printing, ticket stock delivery, postage of tickets etc) represent clear additional reductions in the festival's carbon footprint. E-ticketing is part of a wider move toward the Fringe becoming a paperless festival and thus also provided a useful opportunity to share the festival's wider sustainability goals with festival participants and audiences.



Sustainable Procurement

Challenge/Opportunity

How can you influence the supply chain of festival service providers to act in a more sustainable manner?

Action Taken

Procurement plays a major part in how already environmentally conscious organisations can extend their outreach. In choosing products and suppliers according to their environmental credentials, the Edinburgh International Book Festival aims to make it possible to reduce waste, energy use and carbon emissions.

The Edinburgh International Book Festival developed a simple list of questions to be considered when procuring goods and services for their events, aimed at embedding sustainability in their buying choices. Although cost is often the most limiting factor for any organisation, thinking through the lifecycle of purchases and the long-term potential benefits of a more sustainable choice can have a more positive impact.

The following key questions were considered before the Book Festival made a purchase from a supplier:

- > **Is the item needed or could an alternative be used?**
- > **Is the item made of a biodegradable material or recycled materials?**
- > **Have you ensured that this product has the least environmental impact of those that are available?**
- > **Could this item be hired or borrowed, rather than purchased?**
- > **Can this product/service be sourced locally?**

- > **Does the supplier have an environmental policy?**
- > **If this is an electrical product: – Is the energy star rating A or above? – Does it have a power saving setting?**
- > **Can any packaging be returned to the supplier? If not, can it be recycled?**

There were also a number of other items that the Book Festival requested from all suppliers:

- > **Does the company provide charitable discount?**
- > **Does the company produce other environmental products?**
- > **Can any unused items be returned?**

One area where the Edinburgh International Book Festival has saved both costs and materials use is that they now regularly borrow both mobile phones and tablets that are used by the Front of House teams to admit audiences into the theatres from another member of the Edinburgh Festivals' group. This equipment sharing has since expanded to contactless donation points and ticket printers.

Learnings

Further to their checklist, the Festival also focusses on expanding their reach to influence their suppliers' environmental outlook by sending companies a copy of the festival's own environmental policy. It is anticipated that in time suppliers might develop a policy of their own and that this might also improve the sustainability of the available products, widening the options for sustainable procurement.



Carbon Budgeting Tool

Challenge/Opportunity

How can you understand the impact of our carbon decisions before we make them?

Action Taken

Monitoring and reporting on annual carbon emissions was a starting point for the Edinburgh International Children's Festival. However, retrospective reporting did not allow them to align their strategic priorities with their carbon spending decisions. They needed to understand the impact of any decision before they made it.

Beginning with confirmation of their annual carbon emissions, the festival undertook a process of data analysis of those emissions and then divided the total into smaller sums associated with specific departments. This allowed them to create a specified yearly carbon reduction target for each department. Such measurements gave them clarity about their carbon hotspots but the challenge remained that, although they knew how much carbon they were using and what reductions were needed, they had no way of understanding the full impact of any carbon decisions before making them.

Consequently, they developed an excel-based travel forecasting template and procedure, with travel having been identified as one of the major hotspots across all departments. Staff were able to enter different travel scenarios, modes of travel, and geographic locations into the template and thus work out the impact of decisions before they were made, exploring potential savings through scenario playing around method of transport, number of travellers or travel cancellation. Furthermore, this also enabled staff to identify

where reductions were not possible without additional support/technology (e.g. electric vans/ additional funding to support longer travel methods).

The overall result was that each departmental/ project lead could input all travel anticipated within a given year and, if over their carbon budget, could research and make travel changes with staff teams in good time. This supported the organisation in aligning strategic priorities with overall carbon spending decisions, allowed them to identify potential emissions costs & savings, and enabled them to make sustainable choices at the earliest possible opportunity. Each budget holder is now responsible for the planning and management of their own carbon emissions, and it is a shared responsibility across the organisation.

Learnings

One of the most beneficial features of the project was that it took overall baseline carbon emissions for the whole organisation and split them into specific departments. This enabled Project Managers to view the emissions attached to activity for which they had direct responsibility and then allowed them to identify hotspots and be creative about solutions at early stages of planning. It also allowed the Festival Director to interrogate travel plans for a specific showcase or research visit to ensure that the 'carbon spend' was justified in the context of their overall annual carbon budget.

The process ultimately takes a proactive approach to reducing carbon emissions and enables staff to take direct responsibility for their role in reducing the organisational impact on the environment, building such thinking into the earliest possible stages of planning.



PROGRAMMING

Consumed, photo by Hope Holmes,
courtesy of Edinburgh Science Festival



Residencies

Challenge/Opportunity

How can you start the process of reducing our largest source of emissions, namely artists' travel?

Action Taken

The Edinburgh International Festival recognise that the international nature of their work has an environmental impact and, with a travel carbon footprint of over 1000 tonnes – making up over 80% of their total emissions – the Festival faces a huge challenge as they look to reduce their impact.

The first step towards taking action was to embed sustainable initiatives at the heart of everything they did and setting an overall goal – of reaching net zero carbon emissions across their organisational operations by 2030 and across their artistic programme by 2045. Specific targets were set alongside this goal, including a reduction in artist travel emissions by 10% against the baseline each year and a similar reduction in freight emissions.

To achieve these targets, the festival began an orchestra residency model with the aim being to reduce the amount of travelling undertaken by artists whilst ensuring the programme remained of the highest calibre, internationally diverse and inclusive. Traditionally orchestras would commit to one performance in any given festival year, but what was now proposed was a commitment of 3–4 engagements per festival visit. Similarly, it was envisaged that theatre/dance companies would present more than one production or undertake artist development/community engagement work while in Edinburgh.

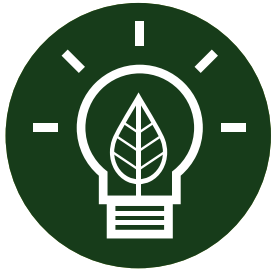
The impact of this was seen in the 2023 festival programme which hosted four orchestras for artistic residencies. The Budapest Festival

Orchestra, The London Symphony Orchestra (LSO), Oslo Philharmonic, and the Simón Bolívar Symphony Orchestra of Venezuela each took up a week's residency focusing on one of the three themes for that year's festival. LSO also performed in several NHS venues in Edinburgh, providing free access to world class music to around 1,000 patients, visitors and staff. The Simón Bolívar Symphony Orchestra worked with the International Festival's year-round community engagement initiatives, including two pop-up performances in community spaces.

Learnings

The overall result of this initiative was that fewer artists were required to travel to Edinburgh for the festival, not only reducing the carbon impact of the programme but also allowing international artists to engage with the community more thoroughly and have a deeper experience of Scottish culture. At an environmental level, the festival believes that the residency model has the potential to save approximately 150 tonnes of CO₂e. for each production that does not travel to Edinburgh (based on a central European starting point).

The festival intends to explore this model further and embrace other new models of working with companies and orchestras to reduce carbon impact, recognising that their artistic programme and associated travel and freight is their biggest impactor. **Not only does this send a message out to the wider sector, but with a large part of their action plan being to work with partners to instil sustainability best practice from the inception to delivery of the festival, the environment actions will ripple across the Scottish cultural sector and beyond.**



Shared International Experiences

Challenge/Opportunity

How can you connect children across the world, to explore their shared and differing ecological experiences?

Action Taken

In a New Light was an international online performance project led by Imagine (the parent company of the Edinburgh International Children's Festival), that brought together children facing barriers accessing the arts in Scotland, Bangladesh and Singapore. Over 8 months, 30 children aged 8–15 and professional artists met online to creatively explore the young people's views of the ecological crisis. Connecting children and artists across borders was key to the project, as was celebrating their diverse stories, cultures and experiences.

The project offered a supportive environment for children to explore complex themes, while engaging in a variety of tasks that encouraged creativity, reflection and collaboration.

The artists led a series of creative exercises with children responding through original movement, writing and spoken word. As Renee Chua, Singapore lead artist, observed:

“They were reserved initially but when they gradually warmed up, it was a riot! It was lovely to have kids who struggle to read in school volunteering to read letters from Bangladesh and Scotland, and the shy ones vocalizing their feelings and thoughts.”

For many young people, the chance to connect with peers from different cultures was profoundly impactful. Their curiosity about each other's lives and cultures was sparked while they were surprised at how interesting their own culture was to others looking in. A child from Singapore shared: “I loved to do Zoom meetings with Bangladesh and Scotland.” Despite language and cultural differences initially hindering conversation, the children persisted, finding common ground in TikTok dances and devising collaborative movement pieces.

In a New Light culminated in a beautiful performance film, capturing the collaborative aspect of the project through original movements, texts and songs by the children, which was premiered at the Edinburgh International Children's Festival.

Learnings

Bringing together children across borders to creatively explore shared experiences was deeply impactful. As well as learning about each other, the children gained confidence, awareness about climate change and friendships spanning the globe. Many children gained new awareness of the climate crisis. In Bangladesh, only some of the children had heard about the climate crisis, although many were experiencing it, and the project was a safe, supportive way of discussing such a vast topic. The collaborative process also helped children realise that their voices matter.



Interactive Exhibition

Challenge/Opportunity

How can you shine a light on human mass consumption and the impact it has on the climate?

Action Taken

Consumed was created by the Edinburgh Science Festival as an interactive public exhibition that shines a light on human mass consumption and its environmental impact.

Initially four shipping containers were refurbished into mini galleries featuring hands-on displays, games and explorations of key themes: what we eat, what we wear and how we live. It showed how small changes in our everyday habits can add up, making a difference that is easy on both our wallet and our planet.

Each shipping container exhibit was staffed by a trained Science Communicator who was able to guide visitors through the four containers – the kitchen container, the circular economy interactive model container, the vintage clothing shop/sewing container, and finally the travel/home electricity and power container.

After that first successful run, the exhibition went on tour in 2023 thanks to the support of Zero Waste Scotland to four cities across Scotland, and with further support from the Scottish Government in 2024, they were able to take the three of the containers to areas of high deprivation in Edinburgh and Dundee.

In the latter case they incorporated a series of education programmes including:

- a set of free drop-in family workshops that encouraged children to imagine their futures and use LEGO to build representations of it

- a Climate Leadership course where community group leaders and trusted messengers took part in collaborative workshops that built their confidence in talking about climate change in a way that not only inspires climate action but also builds sustainability into their projects and organisation.

Learnings

The exhibition received 30,000 visitors over the two-week festival period, with 60% of respondents saying they would now change the way they shopped, 49% would change their use of electricity in the home and 47% would change the way they travel. 100% felt more confident about talking on climate and sustainability and everyone had at least one identifiable action that they were going to take following their attendance.

Having confident communicators running each part of the exhibition meant that people could discuss their everyday lives, and the festival could collect feedback on the types of changes that people were willing to make in their everyday lives, so as to inform future programming interventions.

Crucially through this process the festival learnt that it was not just important to give information about actions but also to point to resources and organisations that can support people to take those actions. Understanding this allowed the festival to improve over time and highlight local initiatives such as community garden projects or free sewing and upcycling workshops thus communicating a major global issue at a personal practical level.



Programming Framework

Challenge/Opportunity

How can you harmonise a commitment to internationalism with robust carbon reduction strategies?

Action Taken

The Edinburgh Jazz & Blues Festival (EJBF) has been actively reducing its carbon footprint by scaling back international engagements. However, they sought a way to sustain the enriching cultural exchange of internationalism while adhering to environmentally responsible practices. This led to the creation of SPARK, a programme designed to shine a spotlight on internationalism whilst fostering sustainable international collaborations. The essence of SPARK is putting a much higher focus on a smaller amount of international engagements. By emphasising targeted, high-impact events, the festival ensures that international programming remains vibrant while minimising its wider ecological footprint. The programme is supported by bespoke branding and a marketing campaign to highlight its distinct goals within the broader festival.

SPARK exemplifies how cultural events can embrace internationalism, proving that environmental responsibility and global cultural exchange can thrive together. SPARK features:

- **Country Focus** – A feature of the Edinburgh Jazz & Blues Festival in July, highlighting a single country through carefully curated, environmentally mindful performances.
- **Showcase Concerts** – Presenting performances that range from seasoned artists to emerging talents, all within a framework that prioritises environmental sustainability.

This is achieved by identifying musicians who have connections with multiple projects and can perform multiple times during the festival.

- **Collaborations** – Strengthening global connections through collaborative projects featuring Scottish and international musicians, allowing international musicians to learn about the Scottish scene and adding value and impact to their stay in Edinburgh.

To date, SPARK has been delivered in partnership with organisations from Norway, Italy, Luxembourg, and Czechia.

Learnings

SPARK has:

- **Strengthened Sustainable Partnerships by building eco-conscious relationships with international festivals and promoters.**
- **Provided Value to Partners by offering international partners the opportunity to showcase quality work while reshaping audience and partner perceptions of jazz in a sustainable context.**
- **Promoted Creative Experimentation by supporting artists in exploring new ideas within an environmentally responsible framework.**
- **Helped to Inform Future Programmes by testing eco-friendly engagement strategies to shape the festival's future initiatives.**

EJBF are currently in the process of identifying like-minded organisations and promotional partners who operate in their timeframe to create sustainable UK touring network for SPARK international partners.



COMMUNICATIONS

Too Close to the Sun by Barrowland Ballet, photo by Brian Hartley,
courtesy Edinburgh International Children's Festival



Creative Commission

Challenge/Opportunity

How can you commission an artist to explore environmental impact as part of our annual programme?

Action Taken

Each year, the Edinburgh Art Festival features leading international and UK artists alongside the best emerging talent, major survey exhibitions of historic figures, and a special programme of newly commissioned artworks that respond to public and historic sites in the city.

In recent years they have been looking at all aspects of environmental policy and developing an approach to reduce their emissions, with the aim to become net zero by 2030. They believe that building resilience to the current and expected impacts of climate change will be crucial to not only cope with threats but also find innovative ways to explore new opportunities.

As part of their advocacy role for environmental awareness, they work with artists for whom environment and climate change issues are at the heart of their work. One such person is artist and activist Ellie Harrison, whose practice makes connections between literal and social mobility and highlights the consequences of our travel choices for our climate.

Ellie's commission for the Edinburgh Art Festival involved the creation of a graph visualising the carbon impact of all 3,988 journeys she had made over the years when she was registered as a self-employed 'professional artist'.

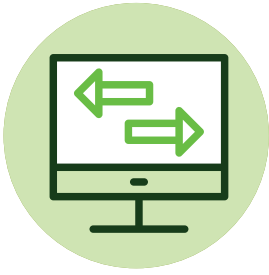
The work is titled *Tonnes of carbon produced by the personal transportation of a 'professional artist'*. The research involved a lot of work looking through her self-employment records, old diaries and photos to make a list of all the journeys made, and then working out the distance of each, before finally using the UK government carbon conversion factors to work out the carbon impact.

It took a long time but, as the artist said, 'it was worth it to be able to see with my own eyes, something that I was feeling – that as I got older and more successful my lifestyle was becoming more unsustainable, and my carbon footprint was increasing'.

Learnings

This commission was a visually striking example of environmental advocacy through art, where the connections between literal and social mobility highlight the consequences of travel choices for our climate – with such choices coming more into focus in our post-pandemic period, as we look to find new ways of communicating and being together; to confront the urgent inequalities in our society; and to imagine new futures.

The ultimate aim in such commissions has to be to create discussion about how we must transform our cities, society and economy in an equitable way, so that a sort of low-carbon living becomes the norm, not the exception.



Web Navigation

Challenge/Opportunity

How can you raise awareness, influence and encourage audiences to be more environmentally sustainable?

Action Taken

The programme at the Edinburgh International Book Festival has around 600 events that take place over two and half weeks during August at the festival site in the centre of Edinburgh. The size of the programme can make the festival challenging to navigate, with as many as 35 events taking place every day across multiple venues – and this is especially challenging if a key priority is to raise awareness, influence and encourage audiences on sustainability matters.

The festival lists all events on their website, with the option to book tickets or, for selected events, watch a livestream from the comfort of home. Although they also produce a printed version of the brochure, the website provides a very useful route to navigate events across their three programmes [Schools, Adults, and Children]. To help raise awareness of events and drive audiences, they classify events into a number of themes – and although these themes change year on year depending on the content of programme, there is always at least one environmental sustainability theme.

In a recent edition, the festival tagged any environment or sustainability events as part of their 'Climate Positive' theme. They defined this series of events as authors 'who offered an energetic call to action, and ideas about how humanity can, and must, step back from the brink'.

They also included a second theme called 'Grounding', which looked at 'human rewilding, getting close to the Earth and what part authors can play in restoring ecosystems and exploring the sustainability of humanity'.

Using the drop-down menu of 'Themes' on their 'explore events' web page, you can filter for the 'Climate Positive' events, and then under strands select Pay What You Can or Free Events, or Environment/Nature etc. Events can also be filtered in other ways, for example by date or watch on demand. The ability for audiences to quickly and easily find events on the themes of sustainability is a key part of communicating their programme and increasing engagement their environmental strand of programming.

Learnings

The website is a key tool for communicating the values and ambitions of the Book Festival to audiences, and a great way to influence more sustainable engagement not only with the programme but also during a visit to the festival site.

With the constant changes in the technological world, it is important that the festival stays on top of all matters relating to web navigation and search functionality, and to that end they will be undertaking a major online redevelopment in coming years which will have sustainability as one of its driving principles.



Net Zero Toolkit

Challenge/Opportunity

How can you influence the wider business community to take action on the climate emergency?

Action Taken

Scotland has set the target of net zero by 2045. Small-to-Medium Enterprises (SMEs) are 99% of the UK business community – their buy-in is vital to achieve this goal. 79% of people in Scotland believe that we need to take climate change seriously immediately and these people prioritise businesses who show strong sustainability credentials. However, building an effective sustainability strategy is complex.

The NetZero Toolkit was born out of discussions at the Edinburgh Science Festival's Climate Co-Lab Series – roundtable meetings for cross sectoral senior leaders – which identified a real need for collated information and resources, without agenda, to aid carbon footprint calculations and reduction targets. If a large organisation employing a wide range of skillsets finds the pathway to Net Zero unclear and yearly targets challenging to define, it was felt that smaller business owners might also be scratching their heads. It was therefore agreed that an online toolkit would be a useful way to help organisations find the information and support they need to embark on their own carbon reduction journey.

As such, the Net Zero Toolkit was created as a free, comprehensive and scientific eight-step online jargon-free toolkit to guide an organisation of any size – but particularly SMEs and microbusinesses – in building effective sustainability strategies, setting targets and

beginning to make meaningful changes towards net zero carbon emissions. The Toolkit breaks sustainability down into eight core components that are relevant to every business: components range from gaining a basic understanding of climate change and the way it may affect your business, understanding different scopes of emissions, building an accurate footprint and setting targets, to learning how to communicate about sustainability in ways that inspire those in your sphere of influence.

Within each component they compiled three further elements – a set of question prompts to help people focus their attention on the most effective aspects of their operations; a detailed set of downloadable guidance notes that give more detail on how to go about completing each component; and a carefully curated set of online resources.

Learnings

It was agreed from the outset that approaching high profile SMEs to promote the toolkit and share their actions would be a crucial way of encouraging other SMEs to join. To date well over 650 businesses from across Scotland have signed up for a net zero toolkit account and are using it to build, monitor and update their sustainability strategies.

Nobody can achieve net zero overnight but the Toolkit offers a free and easy pathway to get to net zero carbon emissions quickly and efficiently, and futureproof not only our businesses and cities, but our world for generations to come. Many thousands drop by without creating an account, just to use the resources within it to ensure that they are keeping sustainability in mind as they develop their businesses.



Swap Shop

Challenge/Opportunity

How can you influence participants to dispose of production and marketing materials in a climate conscious manner and thus communicate a wider environmental message?

Action Taken

The Fringe Swap Shop is an event run by the Edinburgh Festival Fringe Society. It came about because, over the years, it had been observed that at the end of the festival there were sets/costumes/props/marketing material which artists/venues may no longer need or were unable to transport. Due to lack of information and resources, many items temporarily purchased for personal use or as props were treated as waste instead of being recycled.

Consequently, the Fringe Society decided to create a formal infrastructure to support the sustainable use/disposal of these items: a 'swap shop' service at the end of the festival became a place where artists and venues could exchange/donate easily transportable props/costumes/set. Artists, particularly from the city region, were able to collect items they may be able to use in their own future productions. When the Swap Shop days were over, usable items were donated to charity and unusable items recycled where possible. A connected Paper Recycling service ran alongside this, where participants were able to sustainably dispose of marketing material (synonymous with the promotional approach of Fringe shows).

One of the biggest challenges of the 'swap shop' was the ability to anticipate the number of items available, what will be the level of interest, and therefore how to organise/schedule the uplift of any remaining material. With an unknown number

and weight of items to be collected, it can be difficult to get waste contractors to agree to the job! A further item of refinement was the messaging about what items are acceptable and managing the refusal of such items (e.g. rubbish/unusable/broken items) – with members of staff needing to 'police' the event to avoid rogue dumping of materials.

However, it should be noted that the 'swap shop' has a bigger objective which is to make itself obsolete by educating artists and venues about how to use minimal and suitable quantities of materials, while putting in place their own systems for reuse and recycling.

Learnings

Recommendations for those wanting to run their own Swap Shop:

- Decide and define the timings and duration of your event: when are people likely to attend, and what resource do you have to be there?
- Advertise the Swap Shop to the wider public, locals and students as a pickup service. The nature of the Fringe's Swap Shop mean that many incoming students are often looking for furniture or items for the coming university year; this could increase the swap nature where more items carried away by individuals (less carbon footprint) than by a removal service.
- Create relevant local partnerships to hand some of the management and delivery of Swap Shop to partner organisations, with ongoing facilitation and financial support from the primary organisation. Can you partner with a furniture charity to take away any high-quality wooden materials at the end of the event? Can you partner with a sewing school to pass on any costume materials?



EXPERIMENTS

Maya and the Whale, photo by Andrew Perry,
courtesy of Imagineate



Sharing Materials

Challenge/Opportunity

How can you establish a low-waste approach to festival operations in practice?

Action Taken

The Edinburgh Festivals use materials during their Festivals and often store them throughout the year. New materials are bought whilst existing ones occupy storage space, generating more waste and carbon emissions. The challenge was to establish a low-waste approach to such operations in practice.

The first step was to commission a report from Ostrero – an organisation that works to grow the circular economy in Scotland – to explore the sharing of materials between the festivals. At the time Ostrero was also working for Arts Resource Management Scotland (ARMS), piloting a trial of shared storage and resource management software across Scotland's creative industries, and consequently the results of the festivals report fed into this larger scale ARMS work.

The report commissioned by the festivals provided a practical guide to set up a small trial for sharing materials between the Edinburgh Festivals, with the key design principles recommended as follows:

- 1 Provide an overview of system benefits.
- 2 Sharing system is easy to use, works seamlessly, and doesn't add an extra layer of administration at a very busy period.
- 3 Ensure the system uses the simplest format for inputting information in a consistent format so that organisations can easily convert and submit their information.
- 4 Include space on the catalogue to note any major points about the condition of the item.
- 5 Ensure that liability lying with the borrower is included in user overview.
- 6 Ensure the system enables the lender to specify if any specific training is required or if there are any conditions to their lending the item.
- 7 Ensure quantity of items included.
- 8 Track the number of items shared through the shared catalogue.

The plan for a small trial exclusively between the festivals was overtaken by events, when the ARMS work progressed faster than expected. Consequently, six Festivals joined the ARMS pilot, with participation primarily driven by organisational benefits such as saving money on storage/heating/lighting and saving money by hiring/buying less, but also by the secondary possibility that the system could be a useful interface in keeping an up-to-date inventory of their materials.

Learnings

The ARMS project that the festivals are joining is an experiment, and we don't know yet what the outcome will be. However, one crucial learning point at this stage was the need to create buy-in from festival staff who were unsure about how such a system might add value to their work. An early-stage Q&A with ARMS aided the process of engagement.

By participating in this pilot, the festivals are helping to foster innovative ways of reducing environmental impacts. If successful, this experiment could benefit not only the Edinburgh Festivals, but the wider cultural sector in Scotland – and this in turn could have a ripple effect in reducing the environmental impacts of the sector and demonstrating new ways of operating sustainably.



Sustainable Travel

Challenge/Opportunity

How can you bring audiences together with the greatest authors and thinkers from around the globe in an environmentally sustainable way?

Action Taken

Bringing international authors to the Edinburgh International Book Festival is a key part of its being able to provide a true richness of ideas and perspectives across its events, resulting in the bulk of the organisation's carbon emissions being generated by participant air travel. In the midst of the climate crisis, they set about finding ways to reduce their travel-related environmental impact, without diluting the unique experiences offered by its international collaborations.

This gave rise to the festival's Sustainable Travel Pilot project, delivered in partnership with Culture Ireland, which invited three authors to make their way to Edinburgh via slower and more sustainable methods of travel from Dublin, Belfast and Rotterdam. Instead of planes, writers took combinations of ferries, coaches, buses and trains, travelling in total 2,076 miles and saving 300kg of emissions (representing a saving of between 50-75% of the emissions of equivalent air travel).

Travelling via slower, more sustainable methods deprioritises speed, convenience, and cost, and takes more time to organise, so to limit these impacts on the authors and support their participation in the pilot, the Book Festival:

- Helped or handled arranging the transport and accommodation
- Paid the authors for the additional travel time
- Offered to cover any caring or childcare costs associated with the author travelling for longer

- Made every effort to programme the authors into more than one festival event, to maximise their time in Edinburgh

All three authors reported a positive outlook on the experience, and a willingness to repeat this style of journey to future festivals. They shared:

"Travelling itself was a component of the experience [of the festival], not just time spent in the destination."

"It felt so much better than flying. It's a nicer way to travel anyway: you can get more work done on the train, and there is far less stress and guilt."

"Knowing that an institution supports your decision (not to fly), even if it's a little more costly for them, is very helpful. It makes me feel more optimistic about our industry."

Although small-scale in its first iteration, the success of this pilot has proven that authors are open to slower and more sustainable travel options, if adequately supported to do so. The festival is currently planning to expand this initiative in future years, with the partnership of more international cultural institutes.

Learnings

There will always be tension between the desire to have truly international perspectives and voices represented in-person at festival events, but the Sustainable Travel Pilot shows that even at an introductory scale, the positive climate impact is proven and apparent.

Though the impact of asking for more of authors' time, alongside additional resource and investment from the festival to achieve this is not insignificant, the Book Festival is committed to continuing to research and explore more ways of embedding sustainable travel options into its future operations.



Green Hydrogen

Challenge/Opportunity

How can you explore the use of new energy sources for festival events?

Action Taken

Using hydrogen as a source of energy has become an ever more prominent feature in climate policy plans around the world. The Intergovernmental Panel for Climate Change (IPCC) reported that green and blue hydrogen production is likely to hold an important role in energy systems. Although large-scale green and blue hydrogen production is not yet cost competitive, niche applications are beginning to emerge that buck this trend. Proponents hope that hydrogen-powered generators can displace incumbent diesel technology, which existing research has identified as severely damaging for both public health and the environment.

Consequently, the Edinburgh International Festival decided to explore the use of green hydrogen in 2021 – a time when the festival was returning to live performances, following the Covid-19 closure of 2020, and using a number of new temporary structures to ensure adherence to ongoing Government guidelines. With the support of the Scottish Government, and in collaboration with Plus Zero, the Festival piloted a feasibility study on the use of green hydrogen to power city centre events.

A green hydrogen generator was operated for several test performances at an event site in a quiet low-risk area so access could be controlled by a simple physical barrier.

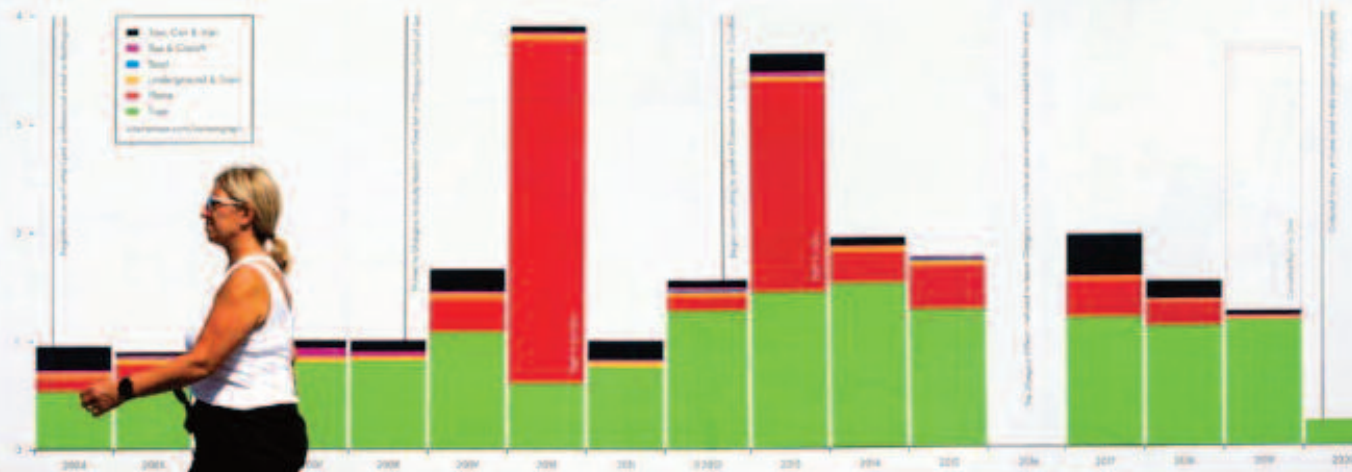
The following are key findings from that feasibility study. This was seen by both the Government and Plus Zero as part of a portfolio of demonstration projects within a wider research and development programme for green hydrogen.

Learnings

- The pilot provided useful learning on the levels of generator capacity that the hydrogen flow was able to deliver reliably, and how the generator could be used alongside emergency back-up power in the event of blackout.
- It was found that a significant factor in site planning was the distance that hydrogen storage needs to be from any combustible material, and PlusZero is looking into secure ways to reduce this distance depending on the specifics of the event site.
- It is hoped that the findings from this pilot will help encourage more renewable energy sites to start producing hydrogen in Scotland, and will contribute to increased utility of these green power generators for other events use.
- More research would be required to better understand the carbon savings of the green hydrogen generators.
- At the same time, the pilot also emphasised the importance of accelerating the decarbonisation of the grid system and finding solutions to hardwiring event spaces, which will deliver the most efficient use of energy.

EDINBURGH
ART
FESTIVAL

Tonnes of carbon produced by the personal transportation of a 'professional artist'



MEASURING AND REPORTING



Validating and Verifying

Challenge/Opportunity

How can you provide an impartial and external review of individual reported emissions?

Action Taken

Although the Edinburgh Festivals report their carbon emissions on an annual basis to various funders, there was a desire from many for an impartial external review of the methodology and calculations that formed the basis of reported emissions and targets. Consequently, Festivals Edinburgh commissioned a Scottish consultancy – Beyond Green – to advise on the accuracy of reported emissions and recommend improvements.

Beyond Green conducted a review of carbon reduction targets outlined by the individual Festivals and also outlined general themes for the Festivals to discuss collectively, such as 'assigning responsibility for carbon reduction targets' and 'setting shorter term steps to meet target and track progress'. In addition, Beyond Green provided some specific recommendations – such as replacing obsolete targets – before then holding a series of workshops to co-create a framework for writing individual carbon reduction plans.

However, it became clear that many of the challenges faced by the festivals were part of the larger goal of achieving net zero collectively, rather than focusing solely on individual carbon reduction plans. As such the festivals felt that the future priority should be on refining a collective net zero narrative, while they would individually continue the operational process of reducing their carbon emissions.

Learnings

An external review was useful in strengthening the festivals' confidence in their internal reporting work and allowed for further recommendations such as:

- creating an evidence file can improve audit trails and data quality (e.g. a methodology that shows path from raw data to final number) – which also helps implement business continuity in the event of staff changes.
- assigning responsibility for carbon reduction targets can ensure progress.
- spreading targets across the team can avoid efforts becoming isolated.
- targets need to be based on quantified carbon reductions, rather than qualitative or undefined ones, wherever possible.

However, the whole process of verifying and validating individual festival emissions took a lot of time and effort, with much work focussed on trying to achieve detailed accuracy on the numbers.

Such a process showed us the truth of the old adage – sometimes you can't see the wood for the trees. Too much time was being spent on measuring, whereas the exact figure was not what mattered most: it was more important to focus on being pragmatic and reliable rather than having detailed accuracy.

**IT IS OUR AMBITION TO PLAY OUR PART IN
ENSURING A WORLD IN WHICH PEOPLE, NATURE
AND CULTURE CAN FLOURISH SUSTAINABLY
FOR THE BENEFIT OF FUTURE GENERATIONS.**





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